DRAFT MODIFIED LANGUAGE TO THE PROPOSED REGULATION ORDER FOR REDUCING EMISSIONS FROM DIESEL-FUELED AUXILIARY ENGINES ON AT-BERTH OCEAN-GOING VESSELS

Note: At its public hearing on December 6, 2007, the Board approved the adoption of a regulation to reduce emissions of oxides of nitrogen (NOx) and diesel particulate matter (diesel PM) from diesel-fueled auxiliary engines used aboard ocean-going ships while docked or at-berth at a California port. The regulation was approved with modifications that were suggested by staff at the Board hearing. In addition, the Board directed staff to make other modifications to the regulation. Shown below is draft language for staff's suggested modifications to the originally proposed regulatory language set forth in Appendix A to the Staff Report: Initial Statement of Reasons released October 19, 2007. This document is printed in a style to indicate changes from the originally proposed regulatory language. All originally proposed regulatory language is indicated by plain type. The suggested modifications are shown in <u>underline</u> to indicate additions to the original proposal and ~~strikethrough~~ to indicate deletions. All suggested modifications will be made available to the public for a fifteen-day comment period prior to final adoption.

OPERATIONAL HOUR LIMITS<u>, REDUCED ONBOARD POWER GENERATION,</u> AND OTHER REQUIREMENTS FOR AUXILIARY DIESEL ENGINES OPERATED ON OCEAN-GOING VESSELS AT-BERTH IN A CALIFORNIA PORT

Adopt new section 2299.3, title 13, chapter 5.1, California Code of Regulations (CCR), to read as follows:

(Note: The entire text of section 2299.3 is new language.):

Section 2299.3. Operational Hour Limits<u>, Reduced Onboard Power Generation,</u> and Other Requirements for Auxiliary Diesel Engines Operated on Ocean-Going Vessels At-Berth in a California Port.

(a) *Purpose*.

The purpose of this section is to reduce oxides of nitrogen (NOx) and diesel particulate matter (PM) emissions from the operation of auxiliary engines on container ships, passenger ships, and refrigerated cargo ships while these vessels are docked at berth at a California port. This section reduces emissions by limiting the time during which auxiliary diesel engines are operated on the

regulated vessels while such vessels are docked at-berth in a California port, as well as by applying other requirements. This section implements provisions of the Goods Movement Emission Reduction Plan, adopted by the Air Resources Board (ARB) in April 2006, to reduce emissions and health risk from ports and the movement of goods in California. This section also helps achieve the goals specified in the California Global Warming Solutions Act of 2006, established under California law by Assembly Bill 32 (Stats. 2006, ch. 488) and set forth in Health and Safety Code § 38500 et seq.

(b) *Applicability and General Exemptions.*

(1) Except as provided in this subsection (b), this section applies to any person who owns, operates, charters, rents, or leases any U.S. or foreign-flagged container ship, passenger ship, or refrigerated cargo ship that visits a California port. In addition, this section also applies to any person who owns or operates a port or terminal located at a port where container, passenger, or refrigerated cargo vessels visit.

(2) Nothing in this section shall be construed to amend, repeal, modify, or change in any way any applicable U.S. Coast Guard requirements. Any person subject to this section shall be responsible for ensuring compliance with both U.S. Coast Guard regulations and the requirements of this section, including but not limited to, obtaining any necessary approvals, exemptions, or orders from the U.S. Coast Guard.

(3) The requirements of this section do not apply to:

(A) Ocean-going vessel voyages that are comprised of continuous and expeditious navigation through any of the Regulated California Waters for the purpose of traversing such bodies of water without entering California internal or estuarine waters or calling at a port, roadstead, or terminal facility. “Continuous and expeditious navigation” includes stopping and anchoring only to the extent such stopping and anchoring are required by the U.S. Coast Guard; rendered necessary by force majeure or distress; or made for the purpose of rendering assistance to persons, ships, or aircraft in danger or distress. This exemption does not apply to the passage of an ocean-going vessel that engages in any of the prejudicial activities specified in United Nations Convention on the Law of the Seas (UNCLOS) 1982, Article 19, subpart 2. Further, notwithstanding any Coast Guard mandated stops or stops due to force majeure or the rendering of assistance, this exemption does not apply to a vessel that was otherwise scheduled or intended to

enter California internal or estuarine waters or call at a port, roadstead or terminal facility.

(B) Auxiliary engines on-board ocean-going vessels owned or operated by any branch of local, state, federal government, or by a foreign government, when such vessels are operated on government non-commercial service. However, such vessels are encouraged to act in a manner consistent, so far as is reasonable and practicable, with this section.

(C) Steamships while berthed at a California port.

(D) Auxiliary engines while such engines are operating primarily on liquefied natural gas or compressed natural gas.

(c) *Definitions.*

For purposes of this section, the definitions in Health and Safety Code sections 39010 through 39060 shall apply except as otherwise specified in this section:

(1) "Alternative Control Technologies" means technologies, techniques, or measures that reduce the emissions of NOx and PM from an auxiliary diesel engine other than shutting down the engine.

(2) "Auxiliary Engine" means an engine on an ocean-going vessel designed primarily to provide power for uses other than propulsion, except that all diesel-electric engines shall be considered "auxiliary diesel engines" for purposes of this section.

(3) "Baseline Fleet Emissions" means the total emissions from all vessels in a fleet during all berthing times in a calendar year or other specified time period. For purposes of calculating the baseline fleet emissions, the auxiliary engines on the vessels in the fleet shall be assumed to use marine diesel fuel while at berth.

(4) "Baseline Fleet Power Generation" refers to the electrical power used by all vessels in the fleet while the ships are docked at berths located at a California Port during a calendar quarter or other time period specified in the regulation.

(4~~5~~5) "Berthing Time" means the time period that begins when the vessel is first tied to the berth and ends when the vessel is untied from the berth.

(~~5~~56) "California Ports" means:

(A) The Port of Hueneme, the Port of Los Angeles (POLA) and Port of Long Beach (POLB), the Port of Oakland, the Port of San Diego, and the Port of San Francisco;

(B) For purposes of this section, POLA and POLB are treated as one port.

(~~6~~7) "Container Vessel" means a self-propelled ocean-going vessel constructed or adapted primarily to carry uniform-sized ocean freight containers.

(~~7~~8) "Diesel Engine" means an internal combustion, compression-ignition (CI) engine with operating characteristics significantly similar to the theoretical diesel combustion cycle. The regulation of power by controlling fuel supply in lieu of a throttle is indicative of a compression ignition engine.

(~~8~~9) "Diesel-Electric Engine" means a diesel engine connected to a generator that is used as a source of electricity for propulsion or other uses.

(~~9~~10)"Diesel Particulate Matter" means the particles found in the exhaust of diesel engines, which may agglomerate and adsorb other species to form structures of complex physical and chemical properties.

(~~10~~11)"Distributed Generation" shall have the same meaning as that term is defined in title 17, CCR, section 94202.

(~~11~~12) "Docked at the Berth" means the state of being tied to a berth.

(~~12~~13) "Emergency Event" means the period of time during which any of the following events occurs; the emergency event begins when such an event begins and ends when the event is over:

(A) Any situation arising from a sudden and reasonably unforeseen event beyond the control of the master that threatens the safety of the vessel;

(B) The utility serving the port states that electrical power will be temporarily unavailable as a result of equipment failure or the utility needs to reduce power from the grid because of a sudden and reasonably unforeseen natural disaster, such as a earthquake, flood, fires, or other acts of God; or

(C) The electrical system at the terminal cannot provide electrical power as a result of equipment failure; ~~or~~

(~~13~~14) "Executive Officer" means the executive officer of the Air Resources Board (ARB), or his or her designee.

(~~14~~15) "Fleet" means all container, passenger, and refrigerated cargo (reefer) vessels, visiting a specific California port, which are owned by or ~~operated~~ otherwise under the direct control of the same person. Direct control includes, but is not limited to, vessels that are operated under a contract, lease, or other arrangement with a third-party for the third-party to operate the vessel. For purposes of this definition, "direct control" does not include the vessel master or any other member of the vessel crew, unless the crew member is also the owner of the vessel. For the purposes of this section, a person shall be deemed to have separate fleets for each California port visited and each fleet is composed of one type of vessel. For example, if a person owns or operates vessels that visit both the Port of Los Angeles and Port of Oakland, that person is deemed to have two fleets, one a "POLA-based fleet" and the other a "Port of Oakland-based fleet."

~~(15) "IMO" means the International Maritime Organization.~~

~~(16) "Landlord Port" means a California port that leases the port's real property to a person(s).~~

(~~17~~16) "Master" means the person who operates an ocean-going vessel or is otherwise in charge of the vessel's operations.

(~~18~~17) "Ocean-Going Vessel" means a commercial, government, or military vessel meeting any one of the following criteria:

(A) A vessel greater than or equal to 400 feet in length overall (LOA) as defined in 50 CFR § 679.2, as adopted June 19, 1996;

(B) A vessel greater than or equal to 10,000 gross tons (GT ITC) pursuant to the convention measurement (international system) as defined in 46 CFR § 69.51-.61, as adopted September 12, 1989; or

(C) A vessel propelled by a marine compression ignition engine with a per-cylinder displacement of greater than or equal to 30 liters.

For the purposes of this section, "ocean-going vessel" will be used interchangeably with the term "vessel."

(~~19~~18) “Operate” means steering or otherwise running the vessel or its functions while the vessel is underway, moored, anchored, or at berth.

~~(20) “Operate an Auxiliary Diesel Engine” means running or idling an auxiliary diesel engine such that it is producing mechanical work or electricity or is otherwise consuming fuel.~~

(~~21~~19) “Own” means having all the incidents of ownership, including the legal title, of a vessel whether or not that person leads, rents, or pledges the vessel; having or being entitled to the possession of a vessel as the purchaser under a conditional sale contract; or being the mortgagor of a vessel.

(~~22~~20) “Oxides of Nitrogen” means compounds of nitric oxide (NO), nitrogen dioxide (NO_2), and other oxides of nitrogen, which are typically created during combustion processes and are major contributors to smog formation and acid deposition.

(~~23~~21) “Particulate Matter” means any airborne finely divided material, except uncombined water, which exists as a liquid or solid at standard conditions (e.g., dust, smoke, mist, fumes, or smog).

(~~24~~22) “Passenger Vessel” means a self-propelled vessel constructed or adapted primarily to carry people.

(~~25~~23) “Person” includes all of the following:

(A) Any person, agent, firm, association, organization, partnership, business trust, corporation, limited liability company, ~~or~~ company, consortium, or any other commercial relationship;

(B) Any state or local governmental agency or public district, or any officer or employee thereof;

(C) The United States or its agencies, to the extent authorized by federal law.

(~~26~~24) “Post-Baseline Fleet Emissions” means the total emissions from all vessels in a fleet after the application of one or more control technologies, such as alternative control technologies, electrical power from the utility grid, and power from sources that are not part of the utility’s electrical grid, during all berthing times at a California port in a calendar year or other specified time period. For purposes of calculating the baseline fleet emissions, the auxiliary engines on the

vessels in the fleet shall be assumed to use marine diesel fuel while at berth.

(~~27~~25) “Refrigerated Cargo (or Reefer) Vessel” means a self-propelled vessel constructed or adapted primarily to carry refrigerated cargo. Reefer vessels include vessels where the cargo may be stored in large refrigerated rooms within the vessel or vessels that carry exclusively refrigerated cargo containers.

(26) “Regulated California Waters” means all of the following:

(A) all California internal waters;
(B) all California estuarine waters;
(C) all California ports, roadsteads, and terminal facilities (collectively “ports”);
(D) all waters within 3 nautical miles of the California baseline, starting at the California-Oregon border and ending at the California-Mexico border at the Pacific Ocean, inclusive;
(E) all waters within 12 nautical miles of the California baseline, starting at the California-Oregon border and ending at the California-Mexico border at the Pacific Ocean, inclusive;
(F) all waters within 24 nautical miles of the California baseline, starting at the California-Oregon border to 34.43 degrees North, 121.12 degrees West; inclusive; and
(G) all waters within the area, not including any islands, between the California baseline and a line starting at 34.43 degrees North, 121.12 degrees West; thence to 33.50 degrees North, 118.58 degrees West; thence to 32.65 degrees North, 117.81 degrees West; and ending at the California-Mexico border at the Pacific Ocean, inclusive.

(~~28~~27) “Responsible Official” means the individual(s) with the authority to certify that all vessels in a fleet comply with applicable requirements of this regulation.

(~~29~~28) “Shore power” refers to electrical power being provided by either the local utility or by distributed generation.

(~~30~~29) “Steamship” means a self-propelled vessel in which the primary propulsion and electrical power are provided by steam boilers.

(~~31~~30) “Synchronous Power Transfer” means the synchronized switchover in vessel-based power to shore-based power without a loss in power during such transfer.

(~~32~~31) “Terminal” means a facility consisting of wharves, piers, docks and other berthing locations and adjacent storage, which are used primarily for loading and unloading of passengers, cargo or material from vessels or the temporary storage of this cargo or material on-site.

(~~33~~32) “Terminal Operator” means a person that leases terminal property from a port for the purpose of loading and unloading of passengers, cargo or material from vessels or the temporary storage of this cargo or material on-site.

(~~34~~33) “Utility” shall have the same meaning and be used interchangeably with the term “Electric Utility” as defined in Public Resources Code section ~~28105~~ 25108.

(~~35~~34) “Verified Emission Control Strategy” means an emission control strategy that has been verified pursuant to the “Verification Procedure for In-Use Strategies to Control Emissions from Diesel Engines” in title 13, California Code of Regulations, commencing with section 2700, which is incorporated herein by reference.

(~~36~~35) “Visit” means the time period that begins when an ocean-going vessel initially ties to a berth (the beginning of the visit) and ends when it casts off the lines (the end of the visit) at a berth in a California port. Separate and sequential visits shall collectively be deemed a single visit when a vessel ties to two or more berths at the same California port and the time interval between leaving one berth and tying to another berth in the same port is less than two hours.

(d) *Vessel In-Use Operational Requirements.*

(1) ~~Limits on Hours and Other Aspects of Operation for Auxiliary Diesel Engines on Container, Passenger, and Refrigerated Cargo (Reefer) Vessels~~ *Reduced Onboard Power Generation Option.*

(A) 2014 Requirements

Except as provided in subsection (d)(2), beginning January 1, 2014, the following shall apply to a fleet visiting a California port:

1. At least 50 percent of the fleet’s visits to the port shall meet the onboard auxiliary diesel engine operational time limits in subsection (d)(1)(E); and

2. The fleet's onboard auxiliary-diesel-engine power generation while docked at the berth shall be reduced by at least 50 percent from the fleet's baseline power generation.

~~no less than 50 percent of a fleet's visits to a California port in a calendar quarter, rounded to the nearest whole visit, shall meet the following limits on the number of hours auxiliary diesel engines on such vessels may be operated at berth:~~

~~1. Three hours total per visit, provided the visiting vessel uses a synchronous power transfer process to change from vessel-based power to shore-based power; or~~

~~2. Five hours total per visit, provided the visiting vessel does not use a synchronous power transfer process to change from vessel-based power to shore-based power.~~

~~For example, if a person's fleet makes 10 visits to a California port in a calendar quarter, the auxiliary diesel engines on vessels in at least 5 of those visits shall be operated no more than a combined 3 or 5 hours total, depending on whether a synchronous power transfer is used. The 3- and 5-hour limit applies to the combined operating time for all auxiliary diesel engines used in a vessel visit, rather than on a per-engine basis.~~

(B) 2017 Requirements

Except as provided in subsection (d)(2), beginning January 1, 20~~20~~17, the following shall apply to a fleet visiting a California port:

1. At least 70 percent of the fleet's visits to the port shall meet the onboard auxiliary diesel engine operational time limits in subsection (d)(1)(E); and

2. The fleet's onboard auxiliary-diesel-engine power generation while docked at the berth shall be reduced by at least 70 percent from the fleet's baseline power generation.

~~no less than 80 percent of a fleet's visits to a California port in a calendar quarter, rounded to the nearest whole visit, shall meet the following limits on the number of hours auxiliary diesel engines on such vessels may be operated at berth:~~

~~1. Three hours total per visit, provided the visiting vessel uses a synchronous power transfer process to change from vessel-based power to shore-based power; or~~

~~2. Five hours total per visit, provided the visiting vessel does not use a synchronous power transfer process to change from vessel-based power to shore-based power.~~

~~For example, if a person's fleet makes 10 visits to a California port in a calendar quarter, the auxiliary diesel engines on vessels in at least 5 of those visits shall be operated no more than a combined 3 or 5 hours total, depending on whether a synchronous power transfer is used. The 3- and 5-hour limit applies to the combined operating time for all auxiliary diesel engines used in a vessel visit, rather than on a per-engine basis.~~

(C) 2020 Requirements

Except as provided in subsection (d)(2), beginning January 1, 2020, the following shall apply to a fleet visiting a California port:

1. At least 80 percent of a fleet's visits to the port shall meet the onboard auxiliary diesel engine operational time limits in subsection (d)(1)(E); and

2. The fleet's onboard auxiliary-diesel-engine power generation while docked at the berth shall be reduced by at least 80 percent from the fleet's baseline power generation.

(D) Exemptions

1. Visits exceeding the operational time limits in (d)(1)(E) that meet the exemption criteria in (d)(1)(F) shall be counted toward compliance with minimum-visit requirements of (d)(1)(A), (d)(1)(B), and (d)(1)(C).

2. The onboard auxiliary-diesel-engine power generation associated with the visit meeting the exemption criteria in (d)(1)(F) shall be removed from the fleet's baseline power generation as calculated pursuant to section (e)(1).

(E) Limits on Hours of Operation

1. Except as exempt in subsection (d)(1)(F), auxiliary diesel engines onboard vessels subject to subsection (d)(1)(A), (d)(1)(B), and (d)(1)(C) shall meet the following operational limits while at berth for the specified percentage of visits by the fleet:

a. Three hours total per visit, provided the visiting vessel uses a synchronous power transfer process to change from vessel-based power to shore-based power; or

b. Five hours total per visit, provided the visiting vessel does not use a synchronous power transfer process to change from vessel-based power to shore-based power.

For example, if a person's fleet is subject to subsection (d)(1)(A) and makes 10 visits to a California port in a calendar quarter, the auxiliary diesel engines on vessels in at least 5 of those visits shall be operated no more than a combined 3 or 5 hours total, depending on whether a synchronous power transfer is used. The 3- and 5-hour limit applies to the combined operating time for all auxiliary diesel engines used in a vessel visit, rather than on a per-engine basis.

(F) Exemptions to Limits on Hours of Operation

1. Emergency Event.

All of the following requirements apply to claimed exemptions to limits on hours of operation based on emergency events:

a. If the master of the vessel reasonably and actually determines that an emergency event, as defined in subsection (c)(13), occurs during the vessel's visit to a California port, the master of the vessel may operate the vessel's auxiliary engines during the emergency event:

b. The master shall not operate the vessel's auxiliary engines for more than one hour beyond the time when the master receives notification that the emergency event is over, determines that the emergency event is over, or should have known the emergency event is over; and

c. The provisions of paragraph (b) above notwithstanding, the master may continue to operate the auxiliary engines for no more than five hours if the master receives notification that the emergency event is over, determines that the emergency event is over, or should have known the emergency event is over and the vessel is scheduled to leave port within five hours.

2. Stage 3 CAISO Emergency

If the California Independent System Operator (CAISO) declares a Stage 3 emergency and the utility providing electrical power to the port is requesting the terminal where the vessel is located to reduce the use of grid-based electrical power, the master of a vessel capable of using grid-based shore power may operate the vessel's auxiliary engines during such emergency. Shore power shall be used for the remainder of the visit when the reduction of grid-based electrical power usage is no longer necessary.

3. Delays Caused By U.S. Coast Guard or Department of Homeland Security Inspections.

The Executive Officer may extend the three-hour/five-hour operational requirement in subsection (d)(1)(E) if the following criteria are met:

a. The initial inspection and clearance of the vessel by the Department of Homeland Security exceeds one hour. The time extension granted shall be commensurate with the excess time necessary for inspection and clearance; or

b. After the auxiliary engines have been put back into service pending departure from the berth, the scheduled departure of the vessel has been delayed by the United States (U.S.) Coast Guard or the Department of Homeland Security.

~~(C)~~(G) Compliance with the requirements in subsection (d)(1)(A), ~~and~~ (d)(1)(B), and (d)(1)(C), shall be determined quarterly for the periods specified as follows:

1. January 1 through March 31, inclusive;

2. April 1 through June 30, inclusive;

3. July 1 through September 30, inclusive; and

4. October 1 through December 31, inclusive.

~~(D)~~(H) Except as otherwise specified in subsection (d)(1)(~~F~~J), the requirements of subsection (d)(1)(A), ~~and~~ (d)(1)(B), and (d)(1)(C) do not apply to:

1. A fleet comprised solely of container or reefer vessels that visits a California port fewer than 25 times total in a calendar year; and

2. A fleet comprised solely of passenger vessels that visits a California port fewer than 5 times total in a calendar year.

[STAFF IS EVALUATING REVISING CRITERIA FROM PORT BASIS TO VISITS TO ALL PORTS IN CALIFORNIA BASIS]

~~(E)~~(I) No person shall sell, supply, offer to supply, or purchase electrical power for use on a vessel during a visit in lieu of using the on-board auxiliary diesel engines, unless such electrical power is either supplied by the local utility or is otherwise generated by equipment that meet the following emission standards:

1. NOx emissions no greater than 0.03 gram per kilowatt-hour (g/kW-hr);

2. PM emissions equivalent to the combustion of natural gas with a fuel sulfur content of no more than one grain per 100 standard cubic foot;

3. CO_2 emissions shall be no greater than 500 g/kW-hr; and

4. Ammonia emissions no greater than five parts per million on a dry volume basis (ppmdv), if selective catalytic reduction (SCR) is used.

~~(F)~~(J) Notwithstanding the requirements specified in subsection (d)(1)(A), ~~and~~ (d)(1)(B), and (d)(1)(C), any ocean-going vessel equipped to receive shore power that visits a terminal with a berth equipped to provide compatible shore power shall utilize the shore power during every visit to that berth, unless the berth is already occupied with a vessel receiving shore power. This requirement shall not apply under the following circumstances:

1. The master of the vessel reasonably and actually determines that an emergency event, as defined in subsection (c)(~~12~~13)(A), is in effect and the use of shore power during the emergency event would endanger the vessel's safety. Shore power shall be used for the remainder of the visit once the master determines that the emergency event no longer exists;

2. An emergency event, as defined in subsection (c)(~~12~~13)(B) or (c)(~~12~~13)(C), is in effect. Shore power shall be used for the remainder of the visit once the emergency event is no longer in effect; ~~or~~

3. The California Independent System Operator (CAISO) has declared a Stage 3 emergency and the utility providing electrical power to the port is requesting the terminal where the vessel is located to reduce the use of grid-based electrical power. Shore power shall be used for the remainder of the visit ~~once CAISO declares the Stage 3 emergency is over~~ when the reduction of grid-based electrical power usage is no longer necessary; or

4. The shore power equipment on the ship fails to function and the master of the vessel has made due effort to repair the shore power equipment.

(2) Equivalent Emissions Reduction Option.

The purpose of this provision is to allow any person the option of complying with the requirements of this subsection (d)(2) in lieu of meeting the requirements of subsection (d)(1).

Requirements.

(A) ~~For fleets visiting terminals that are providing electrical power from the utility's electrical grid, the owner or operator of the fleets shall comply with the following schedule:~~

~~1. For the quarter beginning on January 1, 2014, and each subsequent quarter through December 31, 2019, inclusive, the NOx and PM emissions at berth from the fleet's auxiliary engines must be reduced by 50 percent from the baseline fleet emissions.~~

~~2. For the quarter beginning on January 1, 2020, and each subsequent quarter thereafter, the NOx and PM emissions at~~

~~berth from the fleet's auxiliary engines must be reduced by 80 percent from the baseline fleet emissions.~~

~~(B)~~ For fleets ~~visiting terminals that are providing~~ using one or more control techniques (electric power from the utility grid, electrical power from sources that are not part of an utility's electrical grid, or alternative control technologies) ~~are used~~ to reduce the emissions of the fleet, the owner or operator of the fleet shall comply with the following schedule and compliance period:

1. For ~~the quarter~~ each calendar year beginning on January 1, 2010~~, and each subsequent quarter~~ through December 31, 2011, inclusive, the NOx and PM emissions ~~at berth~~ from the fleet's auxiliary engines when the vessels in the fleet are docked at the berth must be reduced by ~~2~~10 percent from the baseline fleet emissions.

2. For ~~the quarter~~ each calendar year beginning on January 1, 2012, ~~and each subsequent quarter~~ through December 31, 2013, inclusive, the NOx and PM emissions ~~at berth~~ from the fleet's auxiliary engines when the vessels in the fleet are docked at the berth must be reduced by ~~40~~ 25 percent from the baseline fleet emissions.

3. For the quarter beginning on January 1, 2014, and each subsequent quarter through December 31, 201~~5~~6, inclusive, the NOx and PM emissions ~~at berth~~ from the fleet's auxiliary engines when the vessels in the fleet are docked at the berth must be reduced by ~~65~~0 percent from the baseline fleet emissions.

4. For the quarter beginning on January 1, 201~~6~~7, and each subsequent quarter through December 31, 2019, inclusive ~~thereafter~~, the NOx and PM emissions from the fleet's auxiliary engines when the vessels in the fleet are docked at the berth must be reduced by ~~8~~70 percent from the baseline fleet emissions.

5. For the quarter beginning on January 1, 2020, and each subsequent quarter thereafter, the NOx and PM emissions from the fleet's auxiliary engines when the vessels in the fleet are docked at the berth must be reduced by 80 percent from the baseline fleet emissions.

~~(C) For fleets visiting terminals that are using a combination of electrical power from the utility grid and electrical power from sources that are not part of an utility's electrical grid, or alternative control technologies, the following schedule applies:~~

~~1. For the quarter beginning on January 1, 2012, and each subsequent quarter through December 31, 2013, inclusive, the NOx and PM emissions at berth from the fleet's auxiliary engines must be reduced by 20 percent from the baseline fleet emissions.~~

~~2. For the quarter beginning on January 1, 2014, and each subsequent quarter through December 31, 2019, inclusive, the NOx and PM emissions from the fleet's auxiliary engines must be reduced by 50 percent from the baseline fleet emissions~~.

~~3. For the quarter beginning on January 1, 2020, and each subsequent quarter thereafter, the NOx and PM emissions from the fleet's auxiliary engines must be reduced by 80 percent from the baseline fleet emissions~~.

(B) Baseline and post-baseline fleet emissions may be adjusted pursuant to (e)(2)(C) for emergency events and stage 3 emergencies.

(C) Applying Excess Emission Reductions to the 2010, 2012, or 2017 Emission Requirements

1. Reductions achieved before January 1, 2010 can be used toward complying with (d)(2)(A)1., (d)(2)(A)2., or (d)(2)(A)4.

2. Reductions achieved before January 1, 2012, which exceed the amount required by (d)(2)(A)2. can be used toward complying with (d)(2)(A)4.

3. Excess emission reductions above that required by (d)(2)(A)1. or (d)(2)(A)2. cannot be applied to (d)(2)(A)3.

4. Excess emission reductions above that required by (d)(2)(A)1., (d)(2)(A)2., (d)(2)(A)3., or (d)(2)(A)4., cannot be applied to (d)(2)(A)5.

(D) Compliance with the requirements of subsection (d)(2)(A)3., (d)(2)(~~B~~A)4., and (d)(2)(~~C~~A)5. shall be determined quarterly for the periods specified as follows:

1. January 1 through March 31, inclusive;

2. April 1 through June 30, inclusive;

3. July 1 through September 30, inclusive; and

4. October 1 through December 31, inclusive.

(E) No person shall sell, supply, offer to supply, or purchase electrical power for use on a vessel during a visit in lieu of using the on-board auxiliary diesel engines, unless such electrical power is either be supplied by the local utility or is otherwise generated by equipment that meet the following emission:

1. NOx Emissions.

a. Up to and including December 31, 2013, the NOx emissions shall be no greater than 2 g/kW-hr at any time; and

b. Beginning January 1, 2014, the NOx emissions shall be no greater than 0.2 g/kW-hr at any time;

2. PM emissions shall be no greater than the PM emissions from combustion of natural gas with a fuel sulfur content of no more than one grain per 100 standard cubic foot;

3. CO_2 emissions shall be no greater than 500 g/kW-hr; and

4. Ammonia emissions shall be no greater than five ppmdv if selective catalytic reduction is used.

(F) Alternative control technologies using SCR to comply with subsection (d)(2)(A) shall have ammonia emissions no greater than five ppmdv.

~~*(e) Exemptions to the Three-Hour or Five-Hour Limited Auxiliary Engine Operation Requirement in Subsection (d)(1)(A)(1), (d)(1)(A)(2), (d)(1)(B)(1)and (d)(1)(B)(2*~~

~~(1) Emergency Event.~~

~~All of the following requirements apply to claimed exemptions based on emergency events:~~

~~If the master of the vessel reasonably and actually determines that an emergency event, as defined subsection (c)(12), occurs during the vessel's visit to a California port, the master of the vessel may operate the vessel's auxiliary engines during the emergency event;~~

~~The master shall not operate the vessel's auxiliary engines for more than one hour beyond the time when the master receives notification that the emergency event is over, determines that the emergency event is over, or should have known the emergency event is over; and~~

~~The provisions of paragraph (B) above notwithstanding, the master may continue to operate the auxiliary engines for no more than five hours if the master receives notification that the emergency event is over, determines that the emergency event is over, or should have known the emergency event is over and the vessel is scheduled to leave port within five hours.~~

~~(2) Delays Caused By U.S. Coast Guard or Department of Homeland Security Inspections.~~

~~The Executive Officer may extend the three-hour/five-hour operational requirement in subsection (d)(1)(A) and (d)(1)(B) if the following criteria are met:~~

~~(A) The initial inspection and clearance of the vessel by the Department of Homeland Security exceeds one hour. The time extension granted shall be commensurate with the excess time necessary for inspection and clearance; or~~

~~(B) After the auxiliary engines have been put back into service pending departure from the berth, the scheduled departure of the vessel has been delayed by the United States (U.S.) Coast Guard or the Department of Homeland Security.~~

(~~f~~e) *Calculations for Reduced Onboard Power Generation Option in Subsection (d)(1) and Equivalent Emissions Reduction Option in Subsection (d)(2)*.

(1) Reduced Onboard Power Generation

For the purposes of subsection (d)(1), the percent reduction of onboard electrical generation from auxiliary diesel engines while vessels are docked at berth shall be calculated as follows:

Percent Reduction = [Baseline fleet power generation (BFPG) – Power provided by fleet's auxiliary engines] / (BFPG)

Where,

The baseline fleet is calculated as follows:

(A) Baseline Fleet Power Generation (BFPG)

The baseline power generation for the fleet shall be calculated using the following formula:

Baseline Fleet Power Generation = $\sum$ (berthing time x power requirement)

Where:

"Berthing time" is the actual berthing time for each visit for all visits falling within the applicable period specified in subsection (d)(1)(G);

"Power requirements" means the electrical power requirement for the vessel making each visit as determined pursuant to subsection (e)(1)(C);

"$\sum$" means the summation of all visits by the fleet for each visit made in the applicable period specified in subsection (d)(1)(G);

(B) Power provided by fleet's auxiliary engines

The power provided by the fleet's auxiliary engines is calculated as follows:

Power provided by fleet = $\sum$ (Auxiliary engine operating time x power requirement)

Where:

"Auxiliary engine operating time" is the actual time period these engines operated for each visit for all such visits falling within the applicable period specified in subsection (d)(1)(G). The time limits in (d)(1)(E) can be used in lieu of actual operating times for all visits satisfying (d)(1)(E);

"Power requirements" means the electrical power requirement for the vessel making each visit as determined pursuant to subsection (e)(1)(C);

"$\sum$" means the summation of all visits by the fleet for each visit made in the applicable period specified in subsection (d)(1)(G)

(C) Power Requirements.

1. The following values in Table 1 may be used as default values for power requirements:

Table 1.

Ship Category	Ship Size / Type	Default Power Requirement (kW)
Container Vessel	<1000 TEU	1,000
	1,000-1,999 TEU	1,300
	2,000-2,999 TEU	1,600
	3,000-3,999 TEU	1,900
	4,000-4,999 TEU	2,200
	5,000-5,999 TEU	2,300
	6,000-6,999 TEU	2,500
	7,000-7,999 TEU	2,900
	8,000-9,999 TEU	3,300
	10,000-12,000 TEU	3,700
Passenger Vessel		No Default Value – Use Actual Load
Reefer	Break Bulk	1,300
	Fully Containerized	3,300

TEU = twenty-foot equivalent unit.
kW = kilowatt

2. In lieu of the default values above, the fleet operator may, with adequate supporting documentation, use the following:

a. The actual shore power usage, on a monthly basis, rounded to the nearest whole kW-hrs, of the vessels in the fleet utilizing shore power, or

b. The actual on-board power usage, on a monthly basis, rounded to the nearest whole kW-hrs, of the vessels in the fleet utilizing alternative control technologies.

(D) The onboard auxiliary diesel engine power generation associated with the visit meeting the exemption criteria in (d)(1)(F) shall be removed from the calculation for the fleet's baseline power generation and the calculation for the power provided by the fleet's auxiliary engines

(~~1~~2) Equivalent Emission Reduction Option

For the purposes of subsection (d)(2)(A)~~, (d)(2)(B), and (d)(2)(C),~~ the percent emission reduction shall be calculated as follows:

Percent Reduction = (BFE – PBFE) / BFE

Where,

The baseline fleet and post-baseline fleet emissions are calculated as follows:

(A) Baseline Fleet Emissions (BFE).

The baseline fleet emissions of NOx and PM shall be calculated using the following formula:

Baseline Fleet Emissions = $\sum$ (emission rate x average berthing time x power requirement x visits)

Where:

"Emission rate" for each auxiliary engine is determined pursuant to subsection (~~f~~e)(~~2~~3);

"Average berthing time" for each vessel is determined for the applicable period specified in the appropriate subsection (d)(2)(A) or (d)(2)(D);

"Power requirements" means the electrical power requirement for each vessel as determined pursuant to subsection (~~f~~e)(~~3~~)(1)(C);

"Visits" means the total number of visits by the vessel during the applicable period specified in the appropriate subsection (d)(2)(A) or subsection (d)(2)(D); and

"∑" means the summation over the entire fleet subject to the emission reduction option.

(B) Post-Baseline Fleet Emissions (PBFE).

The post-baseline fleet emissions of NOx and PM shall be calculated using the following formula:

Post-Baseline Fleet Emissions = ∑ (emission rate x average berthing time x power requirement x visits x control factor)

Where:

"Emission rate" for each auxiliary engine is determined pursuant to subsection (~~f~~e)(~~2~~3);

"Average berthing time" for each vessel is determined for the applicable period specified in the appropriate subsection (d)(2)(A) or subsection (d)(2)(D);

"Power requirements" means the electrical power requirement for each vessel as determined pursuant to subsection (~~f~~e)(~~3~~)(1)(C);

"Visits" means the total number of visits by the vessel during the applicable period specified in the appropriate subsection (d)(2)(A) or subsection (d)(2)(D);

"Control factor" means the applicable control factor specified in subsection (~~f~~e)(4); and

"∑" means the summation over the entire fleet subject to the emission reduction option.

(C) Adjustments to Baseline Fleet Emissions and Post-Baseline Fleet Emissions Calculations

Emissions associated with the following events can be excluded from paragraphs (A) and (B) above:

1. The visit can be classified as an emergency event;

2. If the California Independent System Operator (CAISO) declares a Stage 3 emergency, the utility providing electrical power to the port is requesting the terminal where the vessel is located to reduce the use of grid-based electrical power, and both the vessel and the terminal is equipped with operational shore power equipment; and

3. The control technology on the ship, including equipment to allow the use of shore power and alternative control technologies, fails to function and the master of the vessel has made due effort to repair the shore power equipment.

(D) Quantifying and Using Early and Excess Emission Reductions

1. Quantifying emission reductions

a. Application for reductions achieved prior to January 1, 2010, shall be identified and submitted by March 1,2010.

b. Application for excess reductions beyond those required for (d)(2)(A)1 and (d)(2)(A)2 shall be identified and submitted for as part of the applicable annual statement of compliance.

c. The reductions are available for use after the approval of the Executive Officer. The Executive Officer shall approve the emission reductions if the applicant demonstrates that the reductions are quantifiable and in excess of the requirements of (d)(2)(A) at the time of application.

2. Eligible Reductions

a. Reductions achieved prior to January 1, 2010

b. Reductions achieved between January 1, 2010, to December 31, 2011, beyond the amount required by (d)(2)(A)1

c. Reductions achieved between January 1, 2012, to December 31, 2013, beyond the amount required by (d)(2)(A)2

3. Use of reductions

a. Upon approval of the Executive Officer, the emission credits can be accumulated and used to comply with (d)(2)(A)1, (d)(2)(A)2, and (d)(2)(A)4 The Executive Officer shall monitor the accumulations and utilization of the early and excess emission reductions.

b. Use of the emission credits to comply with an applicable requirement shall be included as part of the annual statement of compliance for the time period the reductions are utilized.

c. Emission credits cannot be used to comply with (d)(2)(A)3 or (d)(2)(A)5

(~~2~~3) A person complying with the requirements of subsection (d)(2) may choose any of the following emissions rates for use in the calculations specified in subsection (~~f~~e)(~~1~~2)(A) and (~~f~~e)(~~1~~2)(B):

(A) Results from emission measurements for similar auxiliary diesel engines that are used to satisfy a marine engine standard, including U.S. Environmental Protection Agency (EPA) emission standards for marine engines (40 CFR Part 94), and the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 (MARPOL 73/78), both of which are incorporated herein by reference;

(B) Emission measurements approved by the Executive Officer and using the test methods specified in subsection (~~f~~e)(4)(B)(3); or

(C) In lieu of test data measured pursuant to paragraph (A) or (B) above, the following emission rates may be used as default values:

1. 13.9 g/kW-hr for NOx.

2. 0.38 g/kW-hr for PM if 0.11 to 0.5 percent sulfur marine gas oil is used as a fuel.

3. 0.25 g/kW-hr for PM if 0.10 or less sulfur content marine gas oil is used as a fuel.

~~(3) Power Requirements.~~

~~The following values in Table 1 may be used as default values for power requirements~~:

~~Table 1.~~

~~Ship Category~~	~~Ship Size / Type~~	~~Default Power Requirement (kW)~~
~~Container Vessel~~	~~<1000 TEU~~	~~1,000~~
	~~1,000-1,999 TEU~~	~~1,300~~
	~~2,000-2,999 TEU~~	~~1,600~~
	~~3,000-3,999 TEU~~	~~1,900~~
	~~4,000-4,999 TEU~~	~~2,200~~
	~~5,000-5,999 TEU~~	~~2,300~~
	~~6,000-6,999 TEU~~	~~2,500~~
	~~7,000-7,999 TEU~~	~~2,900~~
	~~8,000-9,999 TEU~~	~~3,300~~
	~~10,000-12,000 TEU~~	~~3,700~~
~~Passenger Vessel~~		~~No Default Value – Use Actual Load~~
~~Reefer~~	~~Break Bulk~~	~~1,300~~
	~~Fully Containerized~~	~~3,300~~

~~TEU = twenty-foot equivalent unit.~~
~~kW = kilowatt~~

~~In lieu of the default values above, the fleet operator may, with adequate supporting documentation, use the following:~~

~~1. The actual shore power usage, on a monthly basis, rounded to the nearest whole kW-hrs, of the vessels in the fleet utilizing shore power, or~~

~~2. The actual on-board power usage, on a monthly basis, rounded to the nearest whole kW-hrs, of the vessels in the fleet utilizing alternative control technologies.~~

(4) Control Factors.

(A) The emissions from vessels using grid power in lieu of the vessel's auxiliary engines when the vessels are at berth are presumed to be reduced by 90 percent.

(B) No control efficiencies for alternative control technologies shall be used to comply with the requirements of this provision unless the control efficiencies are calculated or measured as follows:

1. The control efficiencies shall be based on an emission test protocol that is approved by the Executive Officer prior to conducting the emission measurements;

2. The results of the emission measurements conducted pursuant to paragraph 1 above are approved by the Executive Officer; and

3. Emission measurements are conducted using the following test methods~~:~~. Alternative tests methods may be used after receiving written approval from the Executive Officer prior to conducting the emission measurements.

a. NOx and CO_2 shall be measured using California Air Resources Board (CARB) Test Method 100, dated July 1997, which is incorporated herein by reference, or equivalent district-approved test method;

b. Diesel PM shall be measured using ISO 8178 Test Procedures: ISO 8178-1: 1996(E) ("ISO 8178 Part 1"); ISO 8178-2:1996(E) ("ISO 8178 Part 2"); and ISO 8178-4: 1996(E) ("ISO 8178 Part 4"), all of which are incorporated herein by reference; ~~and~~

c. Ammonia slip shall be measured using the Bay Area Air Quality Management District Source Test Procedure ST-1B, Ammonia Integrated Sampling, dated January 1982, which is incorporated herein by reference, or other equivalent district approved test method~~.~~; ~~and~~

d. The sulfur content of fuels shall be determined pursuant to International Standard ISO 8754 (as adopted in 2003), which is incorporated herein by reference.

(C) Results from emission measurements from a verified emission control strategy may be used in conjunction with engine emission information.

(D) The Executive Officer may request periodic emission testing or other types of monitoring to verify the proper operation of alternative control technologies or to verify the emission rate of an auxiliary engine.

1. At a minimum, emission control technologies shall be tested as follows and the results of such testing provided to the Executive Officer within 30 days of the testing:

a. Shore-based systems shall be tested annually to demonstrate the overall percentage of emission reduction being achieved.

b. Catalyst based air pollution control systems installed on vessels shall be tested after every 1,000 hours of operation to determine the overall percentage of emission reduction being achieved.

c. If ~~Selective Catalytic Reduction (~~SCR~~)~~ is used as a control technology, the emissions of ammonia shall also be measured at the same time the NOx emissions are being measured.

2. The Executive Officer may modify the testing frequency as he/she deems appropriate.

(~~g~~f) Terminal Plan Requirements.

(1) A terminal that receives more than 50 vessel visits in 2008 shall submit a plan for the Executive Officer's approval that discusses how the terminal will accommodate the vessels that will visit the terminal who are subject to subsection (d)(1) and (d)(2). The terminal shall submit the plan and subsequent updates to the plan according to the schedule below (Table 2). The plan updates shall address any contingencies that may be necessary for the vessels to meet the requirements of subsection (d)(1) and (d)(2) by the applicable dates.

Table 2.

Vessel Compliance Option	Initial Terminal Plan Due Date	Subsequent Terminal Plan Updates
~~Grid-Based Shore Power~~ Reduced Onboard Power Generation Option: (d)(1) ~~and (d)(2)(A)~~	July 1, 2009	July 1, 2013 July 1, 2016 July 1, 2019
~~Alternative Control Technologies to Grid-Based Shore Power: (d)(2)(B)~~	~~July 1, 2009~~	~~July 1, 2011~~ ~~July 1, 2013~~ ~~July 1, 2015~~
~~Combination of Grid-Based Shore Power, and Alternative Control Technologies~~ Equivalent Emissions Reduction Option: (d)(2)~~(C)~~	July 1, 2009	July 1, 2011 July 1, 2013 July 1, 201~~5~~6 July 1, 2019

(2) Plan Requirements for ~~Grid-Based Shore Power~~ Reduced Onboard Power Generation Option

(A) Specify the schedule for implementing infrastructure modifications, including the following:

1. Utility infrastructure improvements, if any, outside the port boundary;

2. Improvements to port infrastructure; and

3. Major infrastructure improvements to terminal.

(B) Identification of existing berths to be modified or new berths to be constructed that will satisfy the requirements of subsection (d)(1).

(3) Plan Requirements for Equivalent Emissions Reduction Option ~~Alternative Control Technologies~~.

(A) ~~Description of the approach that will be used to reduce in-berth vessel emissions, including whether the approach is a vessel-based approach or shore-based approach~~ Identification of which berths will implement grid-based shore power, non grid-based shore power (distributed generation power), or alternative control technologies;

(B) ~~Identification and description of equipment~~ For berths implementing grid-based shore power, the plan must contain the information specified in subsection (~~g~~f)(2);

(C) ~~Berth(s) where the equipment will be used~~ For berths implementing non grid-based shore power or alternative control technologies, the plan shall contain the following information;

1. Description and schedule for implementing ~~of~~ the approach that will be used to reduce in-berth vessel emissions, including whether the approach is a vessel-based approach or shore-based approach;

2. Identification and description of equipment;

3. Berth(s) where the equipment will be used;

4. Specific vessels affected by the technology, if available, otherwise provide the number of ships that will be affected; and

5. Estimate of the expected reductions in NOx and PM emissions from vessels using the technology, including documentation supporting the anticipated reductions.

~~(D) Specific vessels affected by the technology; and~~

~~(E) Estimate of the expected reductions in NOx and PM emissions from vessels using the technology, including documentation supporting the anticipated reductions.~~

~~(4) Plan Requirements for a Combination of Grid-Based Shore Power, and Alternative Control Technologies.~~

~~(A) Identification of which berths will implement grid-based shore power and which berths will implement alternative control technologies~~

~~(B) For berths implementing shore-based grid power, the plan must contain the information specified in subsection (g)(2).~~

~~(C) For berths implementing alternative control technologies, the plan shall contain the information specified in subsection (g)(3).~~

~~(5)~~(4)A port may submit terminal plans required under subsection (~~g~~f)(1) on behalf of the terminals located at that port.

(~~h~~g) *Reporting and Recordkeeping Requirements*.

(1) Reporting and Recordkeeping Requirements for Persons that Comply with Subsection (d)(1).

(A) The Responsible Official shall provide the following reports to the Executive Officer:

1. A vessel fleet plan for each applicable California port, due to the Executive Officer by July 1, 20~~13~~09, and an updated plan by July 1, 2011, July 1, 2013, July 1, 2016. and July 1, 2019, which includes a listing of the vessels in the fleet that visit the port, both owned and chartered, that would be affected by the requirements specified in subsection (d)(1) ~~and the description of the ability of each vessel to use shore power~~.

The vessel fleet plan shall list the ~~vessels that are able to shut down the vessel's auxiliary engines and use shore power, along with the related~~ following information ~~as follows~~:

a. Name of the port, ~~N~~name of each ~~the~~ vessel, Lloyd's number for the vessel, ~~and~~ vessel category (container, passenger, or reefer), if the vessel is capable of being connected to shore power, and power requirement of the vessel; ~~and~~

b. If the information required in (a) is not available for new or chartered vessels, the vessel plan shall provide an estimate of anticipated number of new or chartered vessels expected to be equipped with shore power, and the expected power requirement of these vessels that are likely to be used to satisfy d(1); and

~~b The port(s) each vessel(s) is expected to visit.~~

2. If the Responsible Official submits an update to the vessel fleet plan indicating that the fleet will satisfy the requirements of (d)(2) instead of the requirements of (d)(1), the update shall provide documentation that the requirements of (d)(2)(A)1 or (d)(2)(A)2, whichever is applicable, have been satisfied.

~~2~~3. An annual statement of compliance pursuant to subsection (d)(1) ~~and (d)(2)~~.

a. The initial annual statement of compliance is due to the Executive Officer by March 1, 2015. This statement is for the 2014 calendar year. Thereafter, the annual statement is due to the Executive Officer by March 1 of each year, certifying compliance with the requirements for the previous calendar year.

b. The ~~annual statement of compliance shall include the~~ following information should be included with the statement of compliance:

i. A statement signed by the Responsible Official that the requirements specified in subsection (d)(1) ~~or (d)(2)~~ have been met for each applicable California port.

ii. Visit and on-board power generation ~~related~~ information for all vessels within a fleet that visited a California port for each California port visited. The list shall include the following information for each vessel in the fleet visiting the applicable port:

I. Current name of the vessel;
II. Lloyd's number for the vessel;
III. Vessel type (cargo, passenger, reefer); ~~and~~
IV. TEU capacity (container vessels only);
V. Total visits, by ~~port and~~ terminal, ~~where the auxiliary engines were shut down;~~
VI. Number of visits where the vessel satisfied the requirements of (d)(1)(E);
VII. Number of visits where the visit for the vessel would fall within the exemptions identified in (d)(1)(F);
VIII. Average berthing time for each port the vessel visited; and
IX. Power load for the vessel, in MW-hr;

iii. The information submitted pursuant to paragraph ~~2.b.~~ (ii) above shall be reported for the following periods:

I. January 1 through March 31, inclusive;
II. April 1 through June 30, inclusive;

III. July 1 through September 30, inclusive; and
IV. October 1 through December 31, inclusive.

(B) Recordkeeping.

1. The following records shall be kept at a central location by the vessel operator. This information shall be supplied to the Executive Officer within 30 days of a request from ARB inspectors or staff.

~~a.~~ A logbook that records, for each visit, the dates, times, and other information as specified below:

~~i~~ a. Name of the vessel, the port and terminal visited;

b. When the vessel initially tied to the berth and when the vessel cast-off the tie lines;

~~ii. When the Department of Homeland Security released the vessel;~~

~~iii~~ c. When the auxiliary engines were initially shut down and subsequently restarted;

~~iv~~.d. Whether departure from the berth was delayed by the U.S. Coast Guard or other federal agency and identification of the agency that caused the delay and reason for the delay~~;~~

~~v~~ e. If an emergency event occurred, a description of that emergency event;

~~vi~~ f. If the vessel could not use shore power as a result of the CAISO declaring a stage 3 emergency, and

~~vii~~ g. ~~If a vessel could not use shore power as a result of equipment failure aboard the vessel~~, A discussion of any onboard equipment failure that prevents the usage of shore power equipment. This discussion should include the following information: date when equipment initially failed, identification of equipment that failed, and the steps taken to repair the equipment, including dates and description for each effort to repair the equipment.

b. Copies of all current U.S. Department of Homeland Security Bureau of Customs and Border Protection "Vessel Entrance or Clearance Statement" documents (CBP Form 1300, version 02/02), which is incorporated herein by reference, if the vessel operator or owner is claiming an exemption pursuant to subsection (e)(2)(A) or (e)(2)(B).

2. All records required pursuant to this provision shall be retained for a minimum of five years.

(2) Reporting and Recordkeeping Requirements for Persons Opting to Comply with the Equivalent Emissions Reduction Option in Subsection (d)(2).

(A) The Responsible Official shall provide the following reports to the Executive Officer:

1. A vessel fleet plan for each applicable California port, due to the Executive Officer by July 1, 2009, and an updated plan by July 1, 2011, July 1, 2013, July 1, 2016, and July 1, 2019 the dates shown in Table 3 below, which includes a listing of the vessels in the fleet that visit the port, both owned and chartered, that would be affected by the requirements specified in subsection (d)(2):

Table 3.

Compliance Option	Initial Vessel Fleet Plan	Subsequent Submittal Due Dates
Grid-Based Shore Power: (d)(2)(A)	July 1, 2013	July 1, 2019
Alternative Control Technologies toor Non-Grid-Based Shore Power: (d)(2)(B)	July 1, 2009	July 1, 2011 July 1, 2013 July 1, 2015
Combination of Grid-Based Shore Power, and Alternative Control Technologies: (d)(2)(C)	July 1, 2011	July 1, 2013 July 1, 2019

The vessel fleet plan shall include the following items:

a. Name of the port, ~~L~~list of the vessels included in the company's fleet that visit the port, including the following information: name of each vessel; Lloyd's number for each vessel~~,~~; vessel category (cargo, passenger, reefer)~~,~~; ~~average number of reefer containers carried by the vessel over the calendar year (container vessels only)~~, ~~and~~ power requirement for each vessel ~~(passenger and reefer vessels)~~; and the control technique (electric power from the utility grid, electrical power from sources that are not part of an utility's electrical grid, or alternative control technologies) used to reduce the fleet's auxiliary engine emissions from the vessels to achieve the requirements specified in subsection (d)(2);

b. If the information required in (a) is not available for new or chartered vessels, the vessel plan shall provide an estimate of anticipated number of new or chartered vessels in lieu of the vessel name and Lloyd's number; and

~~b~~c. ~~Identify the potential alternative control techniques that may be used to achieve the requirements specified in subsection (d)(2).~~ For each control technique, specify the following:

i. ~~The vessels that would be affected by the technique~~ The status of implementation of the control technique; and

ii ~~iii~~ The basis used in determining the expected emission reduction, including submittal of any emission testing or other documentation.

2. An annual statement of compliance.

a. The initial annual statement of compliance is due to the Executive Officer by March 1, 2011~~. the dates in Table 4 below:~~

~~Table 4.~~

~~Compliance Option~~	~~Initial Submittal of Annual Statement of Compliance~~
~~Grid-Based Shore Power Reduced Onboard Power Option: (d)(2)(A)(1)~~	~~March 1, 2015~~
~~Alternative Control Technologies toor Non-Grid-Based Shore Power: (d)(2)(B)~~	~~March 1, 2011~~
~~Combination of Grid-Based Shore Power, and Alternative Control Technologies (d)(2)(C)~~	~~March 1, 2013~~

Thereafter, the annual compliance statement is due to the Executive Officer by March 1 of each year, certifying compliance with the requirements for the previous year.

b. The following items, applicable to the calendar year in question, should be included with the statement of compliance:

i. A statement signed by the Responsible Official indicating that the NOx and PM emission reductions specified by (d)(2) have been achieved for each applicable California port;

ii. ~~The calculated~~ NOx and PM baseline and post-baseline emissions for each fleet, calculated on a calendar year basis if complying with subsection (d)(2)(A)1 and subsection (d)(2)(A)2 and a quarterly basis if complying with subsection (d)(2)(A)3, (d)(2)(A)4 and (d)(2)(A)5 as specified in (d)(2)(D). Include each vessel's contribution, in pounds for the reporting period, to the fleet's baseline and post-baseline emissions; and

iii. Description of the technique(s) used, including electric power from the utility grid, electrical power from sources that are not part of an utility's electrical grid or alternative control~~s~~ technology (or technologies), achievable emission reductions, and supporting documentation (e.g., source test results or verification documentation). For subsequent statements of

compliance, the supporting documents can be referenced.

(B) Recordkeeping.

~~1.~~ The following records shall be kept at a central location by the master and the fleet vessel operator. ~~This information shall be supplied to the Executive Officer within 30 days of a request from ARB staff.~~

1. For each calendar year of vessel activity, an annual summary of emissions that demonstrates compliance with the applicable emission reduction for 2010 and 2012, and a quarterly summary of emissions that demonstrates compliance with the applicable emission reduction for (~~2010, 2012,~~ 2014, ~~or 2016~~ 2017, or 2020~~)~~, which includes the following:

   a. The fleet's baseline and post-baseline levels for NOx and PM emissions for each affected California port; and

   b. Each vessel's contribution to fleet's baseline and post-baseline NOx and PM emissions, including the following information:

      i. Name of each vessel;

      ii. Lloyd's number for each vessel;

      iii. Fuel type and average sulfur content of fuel for each vessel;

      iv. NOx and PM emissions for each vessel, in pounds;

      v. Average hotelling time for each vessel;

      vi. Power requirements for each vessel while at berth;

      ~~vii. For container vessels, the number of reefer containers imported and exported for each container vessel~~;

      vi~~i~~i. Total visits to each terminal at each applicable California port made by the vessel;

~~ix.~~viii. Technology used to reduce emissions and associated control factor used; and

~~x.~~ix. ~~Any equipment failure aboard a vessel that prevented the vessel from using the emissions reduction technology.~~

2. Additional recordkeeping requirements for fleets using grid-based shore power to satisfy (d)(2):

i If an emergency event occurred, a description of that emergency event;

ii If the vessel could not use shore power as a result of the CAISO declaring a stage 3 emergency and the utility requested the terminal where the vessel is located to reduce the use of grid-based electrical power, indicate the date and time when auxiliary engines operated and when the vessel used shore power; and

iii. A discussion of any onboard equipment failure that prevents the usage of on-board control technologies (including equipment to allow the use of shore power and alternative control technologies). This discussion should include the following information: date when equipment initially failed, identification of equipment that failed, and the steps taken to repair the equipment, including dates and description for each effort to repair the equipment.

~~2~~3. Records made pursuant to paragraph (2)(B) above shall be kept for a minimum of five years. This information shall be supplied to the Executive Officer within 30 days of a request from ARB staff.

(3) Reporting ~~and Recordkeeping~~ Requirements for Ports and Terminals.

(A) Affected California ports shall provide wharfinger information to the Executive Officer annually, beginning with the wharfinger information for calendar year 2010.

1. This information shall be provided to the Executive Officer no later than April 1 of the following year.

2. At a minimum, the wharfinger information shall include for each vessel visiting the port:

    a. Name of the vessel;

    b. Vessel type;

    c. Company operating the vessel;

    d. Lloyd's number for each vessel;

    e. Berth used by the vessel; and

    f. Date(s) and time the vessel was initially tied to the berth and subsequently released from the berth.

(B) The affected California ports shall provide a status report to the Executive Officer by July 1, 2011, July 1, 2015, and July 1, 2017, regarding the status of implementing grid-based shore power at the port. The status report shall, as a minimum, discuss the following:

1. Utility infrastructure improvements, if any, outside the port boundary;

2. Improvements to port infrastructure; and

3. Major infrastructure improvements to terminals.

(~~B~~C) The terminal operator shall keep the following records. These records shall be supplied to the Executive Officer within 30 days of a request from ARB staff:

1. Electricity usage for shore power:

    a. Monthly utility billing statements that separately identify electricity supplied for shore power;

    b. Episodes of electrical service interruption by local utility company, as confirmed and documented by local utility company; and

    c. For distributed generation, monthly records that contain the following:

        i. Names of vessels serviced;
        ii. Location of vessels serviced, by berth;

iii. Date and time of use; and
iv. Power, in megawatts, supplied to the vessels.

2. Date, time, and description of equipment failure that affected the ability of vessels to turn off their auxiliary engines or use alternative control technologies to reduce emissions pursuant to (d)(2).

3. Record of each vessel that did not operate its auxiliary engines while the vessel was docked at the berth ~~terminal~~:

a. Name of vessel; and

b. Date and time each vessel was initially tied to the terminal.

4. Records made pursuant to paragraph (3)(~~B~~C) above shall be kept for five years.

(4) Electronic submittals of records and other information required under this section may be approved by the Executive Officer upon request, provided such electronic submittals use digital signatures that meet the requirements specified in Government Code section 16.5. Notwithstanding the approved submittal of electronic records, the Executive Officer may request the submittal of a hard copy of any electronic submittal.

(~~i~~h) *Violations.*

(1) Except as otherwise specified in this subsection, any person who is subject to this section and commits a violation of any provision, prohibition, limit, standard, criteria, or requirement in this section is subject to the penalties, injunctive relief, and other remedies specified in Health and Safety Code section 42400 et seq., other applicable sections in the Health and Safety Code; and other applicable provisions as provided under California law for each violation. Nothing in this section shall be construed to limit or otherwise affect any applicable penalties or other remedies available under federal law.

(2) Except as otherwise specified in this subsection, any failure to meet any provision, prohibition, limit, standard, criteria, or requirement in this section, including but not limited to the applicable emission limits for supplied shore power and hours of engine operation limits, shall constitute a single, separate violation of this section for each hour that a person operates the auxiliary diesel engine until such provision, prohibition, limit, standard, criteria, or requirement has been met.

(A) The number of violations if the provisions of (d)(1) are not satisfied are determined as given below:

1. If the fleet fails to achieve the baseline power reduction requirement as specified in (d)(1)(A), (d)(1)(B), or (d)(1)(C), the number of violations shall be determined with the formula in (h)(2)(C)1

2. If the fleet fails to achieve the applicable number of visits using shore power as specified in (d)(1)(A), (d)(1)(B), or (d)(1)(C), the number of violations shall be determined with the formula in (h)(2)(C)2

3. If the fleet fails to achieve both the baseline power reduction and the visits using shore power as specified in (d)(1)(A), (d)(1)(B), or (d)(1)(C), the number of violations shall be determined with the formula in (h)(2)(C)3

4. If a vessel subject to (d)(1)(J) does not use shore power for every visit to terminals that have available shore power, the number of violations shall be determined with the formula in (h)(2)(C)4

(B) If the emission reductions, pursuant to (d)(2), does not achieve the applicable percentage of reduction, the number of violations shall be determined with the formula in (h)(2)(C)5

(C) Violation formulas:

1. Number of violations = MW-Hr shortfall / 1.8

2. Number of violations = visits * MW-Hr per visit / 1.8

"Visits" refers to the shortfall in the number of visits in the applicable quarter that should have used shore power in order to comply with (d)(1)(A), (d)(1)(B), or (d)(1)(C)

"Mw-Hr per visit" shall be based on the average MW-Hr for a visit for the applicable quarter (∑total Mw-hr in quarter / total visits in quarter)

3. Number of violations = MW-Hr shortfall for the applicable quarter / 1.2

4. Number of violations = visits * MW-Hr per visit / 1.8

"Visits" refers to the number of visits the vessel did not use shore power in the applicable quarter

"MW-Hr per visit" shall be based on the average Mw-hr for the vessel for all visits in the applicable quarter

5. Number of violations = [NOx + PM shortfall] / 57

(3) A violation of the recordkeeping and reporting requirements in this section shall constitute a single, separate violation of this section for each day that the applicable recordkeeping or reporting requirement has not been met.

(~~j~~i) *Severability.*

If any subsection, paragraph, subparagraph, sentence, clause, phrase, or portion of this regulation is, for any reason, held invalid, unconstitutional, or unenforceable by any court of competent jurisdiction, such portion shall be deemed as a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining portions of the regulation.

NOTE: Authority cited: Sections 38560, 38560.5, 39600, 39601, 41511, 43013, and 43018, Health and Safety Code. Reference: Sections 38560, 38560.5, 39000, 39001, 39515, 39516, 41510, 41511, 43013, and 43018, Health and Safety Code; and *Western Oil and Gas Ass'n v. Orange Country Air Pollution Control District*, (1975) 14 Cal.3d 411, 121 Cal.Rptr. 249.